OCTA

AFFILIATED AGENCIES

Orange County Transit District

Local Transportation Authority

Service Authority for Freeway Emergencies

Consolidated Transportation Service Agency

Congestion Management Agency

Service Authority for Abandoned Vehicles

September 25, 2012

Mr. Hasan Ikhrata
Executive Director
Southern California Association of Governments
818 W. 7th Street, 12th Floor
Los Angeles, CA 90017

Dear Mr. Ikhrata: Hasan

The current economic downturn has significantly impacted the Orange County Transportation Authority's (OCTA) ability to absorb new bus transit capital costs. OCTA has a transportation control measure in the current Federal Transportation Improvement Program (FTIP) that must be delayed in order to bring capital costs into balance with ongoing operation costs and available resources. This project is the bus purchase and service expansion project (ORA041501).

OCTA recognizes that substitute projects are required by air quality regulations if a project is to be removed from the FTIP. OCTA requests that the bus purchase and service expansion project be substituted with ten regional signal synchronization projects throughout Orange County. The signal synchronization projects offer equivalent air quality benefits and will be implemented on an equivalent schedule to the bus purchase and service expansion project. OCTA and the local agency partners have committed over $6 million towards the signal synchronization projects. I have attached a report prepared by OCTA staff describing the specifics of the request, the air quality analysis methodology, and its benefits.

OCTA would like to proceed with the substitution process for the bus purchase and service expansion project at your earliest convenience. We understand the substitution process starts with the Southern California Association of Governments' recommendation to the Transportation Conformity Working Group (TCWG). We would greatly appreciate your assistance in preparing for and working through the substitution process with our state and federal partners on the TCWG.

Please contact Anup Kulkarni, Section Manager, Regional Modeling, at (714) 560-5867 for the next steps on the substitution process and follow-up on the attachment. Thank you for your assistance in this important matter.

Sincerely,

Kia Mortazavi
Executive Director, Planning

KM:ak
Attachments

c: Huasha Liu, SCAG
Rongsheng Luo, SCAG
Jonathan Nadler, SCAG
Kia Mortazavi, OCTA
Kurt Brotcke, OCTA
Anup Kulkarni, OCTA
Domingo MacLang, OCTA

Replacement of Bus Purchase Transportation Control Measure with Regional Signal Synchronization Transportation Control Measure

Introduction

The Orange County Transportation Authority previously committed to funding of the purchase of additional buses by June 2014 in support of increased bus service as a transportation control measure (TCM). Due to financial pressures, the implementation of this bus purchase and service expansion, TCM is recommended to be replaced. For air quality conformity purposes, OCTA is proposing signal synchronization along ten regional corridors (regional signal synchronization) as a replacement to the previously planned bus purchase TCM in the Federal Transportation Improvement Program. Project descriptions and air quality modeling results are discussed below.

Project Description

The regional signal synchronization TCM consists of the following set of signal synchronization projects listed below and graphically illustrated in Attachment A.

- Crown Valley Parkway
- Goldenwest Street
- Marguerite Parkway
- Talbert Avenue/MacArthur Boulevard
- Warner Avenue
- Bastanchury Road
- Jamboree Road
- Lambert Road
- Lincoln Avenue/Nohl Ranch Road
- Euclid Street

The regional signal synchronization TCM includes 102 miles of roadway, 355 signalized intersections, can be implemented before June 2014, and will have equivalent air quality benefits to the region.

Compliance with Substitution Requirements

- Equivalent Emissions Reduction: OCTA has analyzed the countywide emissions impacts of the substitute project (regional signal synchronization TCM) and concluded that it provides equal or greater emission reductions. See the Air Quality Analysis Methodology below.

- Similar Geographic Area: Both the bus purchase and service expansion TCM and the regional signal synchronization TCM are located in the Orange County portion of the South Coast Air Basin.

- Full Funding: OCTA has current funding from Measure M2 and local agencies, in an amount of over $6 million, for the regional signal synchronization TCM.

- Similar Time Frame: The proposed regional signal synchronization TCM will be operational by June 2014, equivalent to the schedule of the bus purchase and service expansion TCM schedule.

- Timely Implementation: The proposed substitution is the means by which the obstacle to implementation of the bus purchase and service expansion TCM is being overcome.

- Legal Authority: OCTA has legal authority to fund and/or implement the substitute regional signal synchronization TCM.

Air Quality Analysis Methodology

The air quality impacts of the projects were calculated with the proposed regional signal synchronization TCM using a multi-step method based on the SCAG emission methodology focused on Orange County. The following process was used:

Step 1: Obtain daily vehicle miles traveled (VMT) and speed data for freeways, arterials and transit buses from Orange County Transportation Analysis Model (OCTAM). OCTAM is a conventional transportation model used to forecast travel demand with a forecast year of 2035. It is consistent with SCAG's regional model as it incorporates the most recent socio-economic data for Orange County and the surrounding region. Each alternative was modeled separately using OCTAM and post-processed using the NCHRP 255 process. This process provides a standard methodology to refine forecasted volumes on links based on a combination of base year traffic counts, base year model estimates, and forecasted model estimates using incremental adjustments. The output of the travel demand model and post-processing included travel information on both the bus purchase and service expansion TCM and regional signal synchronization TCM. Loaded link information, intrazonal travel speeds, and intrazonal travel volumes were extracted for all modeled time periods for both alternatives.

The coding of both TCMs was consistent with previous OCTAM modeling practices. This included modeling additional bus routes and increased bus frequency on established routes. On local streets and roads, OCTAM includes freeflow speeds that reflect a combination of classification of the roadway, along with delays associated traffic signals, driveways, and other impediments. To reflect the implementation of the signal synchronization, these freeflow travel speeds were increased by five percent to represent the impact of signal coordination on that roadway.

Step 2: Run the SCAG emissions program using the extracted information from Step 1 as input to obtain vehicle starts, VMT, and vehicle population data. The program automatically updates all required inputs to reflect the OCTAM runs and produces files that are input to the California Air Resources Board Emission Factors (EMFAC) model. EMFAC is used throughout California to calculate emission rates from motor vehicles, such as passenger cars and heavy-duty trucks, operating on freeways and local roads. EMFAC provides an estimate of the level of exhaust emissions (via Reactive Organic Gases [ROG] and Nitrogen Oxides [NOx]) for all Orange County.

Step 3: Using the emissions output from Step 2 (Attachments B and C), identify the bus purchase and service expansion TCM, and regional signal synchronization TCM.

Findings

The air quality forecasts for the bus purchase and service expansion TCM were compared with those of the regional signal synchronization TCM using the methodology described in the previous section.

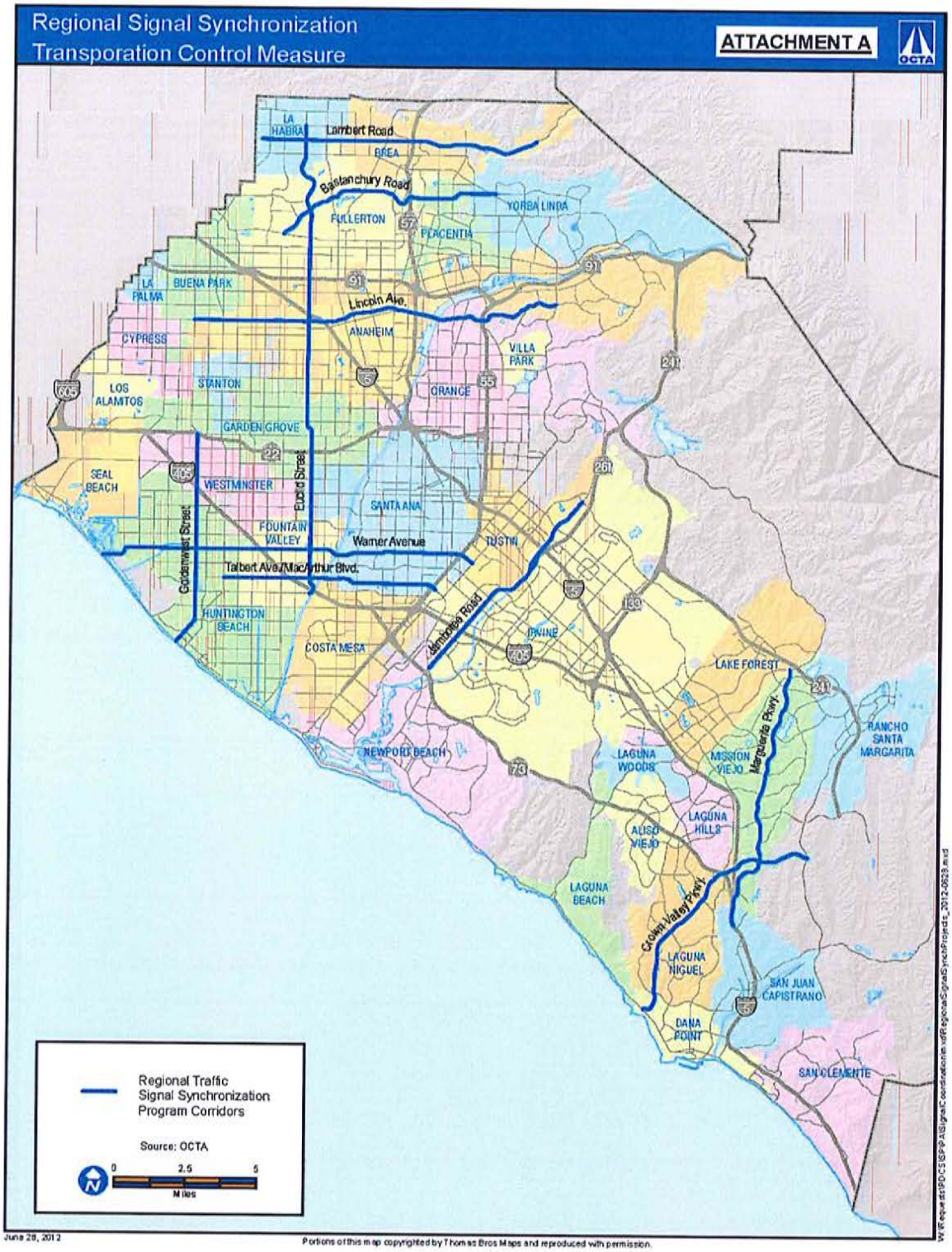
2035 Comparison of Bus Purchase and Service Expansion TCM
and Regional Signal Synchronization TCM
(in daily U.S. tons for Orange County)

	Bus Purchase and Service Expansion TCM	Regional Signal Synchronization TCM
ROG	15.348	15.347
NOx	20.157	20.156

The results indicate that the proposed regional signal synchronization TCM will have equivalent or greater air quality benefits to the bus purchase and service expansion TCM in Orange County and the region.

Attachments

A. Regional Signal Synchronization TCM Map
B. Bus Purchase and Service Expansion TCM EMFAC Output
C. Regional Signal Synchronization TCM EMFAC Output


Regional Signal Synchronization
Transporation Control Measure
ATTACHMENT A
OCTA
LA HABRA
Lambert Road
BREA
Bastanchury Road
FULLERTON
YORBA LINDA
PLACENTIA
LA PALMA
BUENA PARK
Lincoln Ave.
ANAHEIM
CYPRESS
VILLA PARK
LOS ALAMITOS
STANTON
ORANGE
GARDEN GROVE
SEAL BEACH
WESTMINSTER
Euclid Street
SANTA ANA
FOUNTAIN VALLEY
Warner Avenue
TUSTIN
Goldenwest Street
Talbert Ave./MacArthur Blvd.
HUNTINGTON BEACH
COSTA MESA
Jamboree Road
IRVINE
LAKE FOREST
Margarita Pkwy.
RANCHO SANTA MARGARITA
NEWPORT BEACH
LAGUNA WOODS
MISSION VIEJO
LAGUNA HILLS
ALISO VIEJO
LAGUNA BEACH
Crown Valley Pkwy.
LAGUNA NIGUEL
SAN JUAN CAPISTRANO
DANA POINT
SAN CLEMENTE
Regional Traffic Signal Synchronization Program Corridors
Source: OCTA
0
2.5
5
Miles
June 28, 2012
Portions of this map copyrighted by Thomas Bros Maps and reproduced with permission.

ATTACHMENT B

Bus Purchase and Service Expansion TCM EMFAC Output

Version : Emfac2007 V2.3 Nov 1 2006 ** WIS Enabled **
Run Date : 2012/06/21 16:20:18
Scen Year : 2035 - All model years in the range 1991 to 2023 selected
Season : Summer
I/M Stat : Enhanced Interim (2005)
Emissions : Tons per Period

ON-ROAD EMISSIONS

VRIABLS	L & MDV	HDV	OTHER	ALL VEHICLE
ROG Total	13.253	1.916	0.180	15.348
NOx	6.281	11.405	2.472	20.157

ATTACHMENT C

Regional Signal Synchronization TCM EMFAC Output

Version : Emfac2007 V2.3 Nov 1 2006 ** WIS Enabled **
Run Date : 2012/06/21 16:22:18
Scen Year : 2035 - All model years in the range 1991 to 2023 selected
Season : Summer
I/M Stat : Enhanced Interim (2005)
Emissions : Tons per Period

ON-ROAD EMISSIONS

VRIABLS	L & MDV	HDV	OTHER	ALL VEHICLE
ROG Total	13.251	1.916	0.180	15.347
NOx	6.279	11.405	2.472	20.156